UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,699	03/07/2007	Anders Thornell-Pers	9062A-000109/US/NP	3693

28997 7590 08/19/2009
HARNESS, DICKEY, & PIERCE, P.L.C
7700 Bonhomme, Suite 400
ST. LOUIS, MO 63105

EXAMINER	
KARACSONY, ROBERT	
ART UNIT	PAPER NUMBER
2821	

MAIL DATE	DELIVERY MODE
08/19/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/578,699	THORNELL-PERS, ANDERS	
	Examiner	Art Unit	
	ROBERT KARACSONY	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 May 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-7 and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Rowell* (WO 01/20718, hereinafter *Rowell*).

Claims 1, 10 and 19: *Rowell* (figs. 4 and 5) teaches an antenna device for a portable radio communication device operable in at least a first and a second frequency band, the antenna device comprising:

a first electrically conductive radiating element (421) having a feeding portion (440) connectable to a radio frequency feed device of the radio communication device and a grounding portion (450) connectable to a ground device;

a second electrically conductive radiating element (422);

a controllable switch (460) arranged between the first and second radiating elements for selectively interconnecting and disconnecting the radiating elements, the state of the switch being controlled by means of a control voltage input (V_{switch}); and

a filter (503 and 504) arranged between the second radiating element and the control voltage input (V_{switch}), wherein the filter is arranged to block radio frequency signals.

Rowell fails to explicitly teach the filter comprises a resister such that the filter has a purely resistive impedance. However, it was well known to the skilled artisan at the time of the

invention to construct RF filters using various means, such as purely resistive filters. The claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the filter of *Rowell* with one that is purely resistive, with a reasonable expectation of success, since the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Claim 2: *Rowell* teaches the switch comprises a PIN diode (page 8, lines 13).

Claims 3 and 4: *Rowell* teaches all of the limitations of claim 1, as discussed above, however, fails to explicitly teach the filter is a low pass filter blocking signals at frequencies equal to and higher than the lower frequency band of said at least first and second frequency bands or the filter is a band stop filter blocking signals in both a lower and a higher frequency band of said at least first and second frequency bands. However, since the there are only a finite number of existing filters to block RF, including low pass and band-pass filters, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected a low pass or a band-pass filter from a finite number of filters in order to have blocked RF.

Claim 5: *Rowell* teaches the first radiating element has a configuration that provides for more than one resonance frequency (page 6, lines 27-28).

Claim 6: *Rowell* teaches at least one of the first and second radiating elements comprises a protruding portion (portion of '422' that switch '460' is in contact with), and wherein the switch is connected to the protruding portion.

Claim 7: *Rowell* teaches a generally planar printed circuit board (page 7, lines 23-24), wherein the first and second radiating elements and the switch are arranged generally parallel to and spaced apart from the printed circuit board.

Claim 9: *Rowell* teaches the filter is provided integrated with the second radiating element (fig. 4).

Claims 11-18 and 20 are similar in scope as claims 1, 10 and 19 and are, therefore, rejected for substantially the same reasons.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Rowell*.

Claim 8: *Rowell* teaches all of the limitations of claim 1, as discussed above, however, fails to teach the antenna device has a volume less than $3cm^3$. However, it is well known to the skilled artisan at the time of the invention that the dimensions of an antenna is dependent on the frequency at which the antenna resonates. A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the volume of the antenna device of *Rowell* less than $3cm^3$, with a reasonable expectation of success, since the dimensions of an antenna is dependent on the frequency at which the antenna resonates.

Response to Arguments

4. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT KARACSONY whose telephone number is (571)270-1268. The examiner can normally be reached on M-F 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. K./
Examiner, Art Unit 2821

/Hoang V Nguyen/
Primary Examiner, Art Unit 2821